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ABSTRACT

This short, narrative pamphlet accompanies the appropriate grade level curriculum guide. (BP)

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Environmental Quality Control in the Paper Industry

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"I made an appointment to see my counselor tomorrow," Bob announced as he bounded in the door after school.

"Is there some problem?" Mother asked.

"Just my whole life," Bob replied. "Since I've almost finished seventh grade, I decided it was time to think about my future."

"Are you still thinking about some career in environmental control?" Mrs. Cook asked.

"Yes. But I want to combine it with some kind of research. Maybe they will solve all the environmental problems in a few years and then I wouldn't have an occupation," Bob said.

"That sounds like a mature attitude," Mother said. "Do you have some particular field in mind?"

"I want to work some way in the paper industry. Since I enjoy hiking and back packing so much, maybe I can help save some of the forests for future generations," he said.

Bob's counselor was delighted to talk about careers. "So much of my time is spent with behavior problems, this will be a real pleasure," he told Bob.

The counselor said, "I know they have quality control specialists in all phases of paper production. Basically they check to see standards are met. When defects are found, research enters into the picture."

"Good," Bob said. "I really want to get involved in research as well as environmental control. Do you know what kinds of specific jobs there are or what courses I should take?"

"We just got a new career guide," Mr. Atkins said. Looking on the shelf for the volume, he said, "Off the top of my head I do know you would need chemistry and

math for any kind of research in the industry."

"Here the book is," Mr. Atkins continued. "It deals with career opportunities in ecology, conservation and environmental control." They started to leaf through the book. "It looks like it deals more directly with the environment. There is a section on forestry that might have something of interest."

"May I check out the book?" Bob asked. "There may be other areas that sound interesting. What do you suppose a nuclear technician could do to help the environment?"

"Of course you may borrow the guide," Mr. Atkins said. "What is your big interest in the environment?"

"Well, I guess it all started because the whole family likes to hike and camp. My sister Betty came home one day and announced she was joining the ecology club in high school. Then I didn't even know what the word meant."

"Do you now?" Mr. Atkins quizzed.

"Oh, yes, basically it is just the relationship of all living things to the environment. My sister got us started on a family conservation program. We recycled newspapers and bottles and even started our own compost spot down in the woods behind our house," Bob explained.

"The more I see waste, the more concerned I am about my own future," Bob said. "We'll probably run out of trees if they don't start conserving them."

"I'm not sure that's true anymore," Mr. Atkins said. "Our paper companies are working hard to practice good environmental policies both to conserve, or manage, the forests. Would you like to have me find you some information on that?"

"Sure," Bob said. "I have heard the lumber and

paper companies also work hard on pollution control, but I still see some smoke and smell the gases," Bob continued.

"I'll see what information is available on that. You can probably find something in the library, too, because pollution has become a popular issue. Try looking in Readers Guide for magazine articles about it. Shall we make an appointment for next week at the same time? By then you should have finished the career guide and that should give me time to get some information for you."

The next day after school Bob went to the library to do some fun research on pollution and controls. It didn't take him long to find out paper companies were indeed trying hard to curb both air and water pollution. Federal controls helped and companies were investing millions of dollars in quality control devices.

That night at the dinner table Bob said, "I found out why the paper mill still smells bad even though they have air quality controls."

"Great," Betty said. "I need a short report of some kind for the ecology club tomorrow afternoon and I was planning to walk down to the library tonight. Maybe you'll be able to save me the trip."

"Well," Bob said, "The problem at the kraft mills is reduced sulfur compounds. They can't be removed like other chemicals with the electrostatic precipitators. But the article I read said even though the odor was bad, it was really only minute particles being emitted and it is harmless to plant and animal life."

"Did they indicate in the article there was any hope of solving the odor problem?" Betty asked.

"The only thing they mentioned was an odor reduc-

tion device now being tried," Bob said. "But they did say that by the mid-1970's this kraft mill odor would be reduced 95 percent below the 1969 levels."

Betty was grateful for the information and finished her short report in no time with Bob's help. She explained each member took turns giving information to the others about advancements, problems or interesting facets of ecology.

"Could I come to a meeting," Bob asked. Betty wasn't sure he would be welcome but said she would check with the club officers. As it turned out, Bob's request to attend worked into an exchange program with high school members of the club presenting information to the junior high students in various home room projects.

When Bob checked back with Mr. Atkins next week, he reported success in finding information about pollution. "The book was interesting," Bob said. "Somehow I hadn't even considered some of those occupations as being directly related to conservation or the environment. It was fun to skim through the job requirements for things like civil engineer, urban planning technician, and nuclear technician."

"Was the forestry section helpful?" Mr. Atkins asked.

"It was interesting," Bob replied. "It was neat the way they showed how trained forestry technicians can protect and conserve the forests. I didn't dream there could be so many related jobs. Somehow I thought there might be some research to create better grades of trees. But I was amazed they listed ten different occupations for beginners in the field and just as many advancement possibilities."

"Did it give information on courses you should

take?" Mr. Atkins asked. "Well, it didn't say anything about high school, but it listed a typical college course for the two year program. They did have math and surveying and even technical drawing. Even though there are some interesting ideas, and I could work outdoors, I'm still interested in the paper industry. What did you find out?"

"I had a tougher job than you did," Mr. Atkins replied. "I finally had a friend from the mill stop by our house for coffee one night to give me some details. There is a real need for better career information. I understand the state is working on some occupational cluster guides that should be helpful for teachers and counselors."

"Before my friend would give me particulars about jobs, he made sure I understood the process at the mill," Mr. Atkins said. "I guess I should start that way with you. Here's a chart that shows what happens to the effluent."

The chart showed how the effluent goes from the paper machine into a sewer drain and travels through this pipe to a screen. Here the large fibers are taken out of the effluent. From there the remaining liquid and suspended fibers feed into a settling basin. Every other month this is dredged to collect the fines that have settled to the bottom.

Remaining effluent is piped into a holding lagoon. Here it can absorb air from the surface. Mr. Atkins found out many mills now use aeration machines to beat oxygen into the water. This reduces the time it takes for bacteria to eat up the wood sugars in the discharge water so it can be reused in the paper making process.

The workers in quality control run continuous

tests on the effluent. Many of these are for the company records and some must be sent to the state each month.

"Actual environmental control jobs in the paper mill are the lab technician, technical superintendent, lab stenographer and lab statistician," Mr. Atkins told Bob. "The lab technicians collect samples and do the chemical testing of effluent, but the statistician takes these and interprets them. Both jobs require math and chemistry," Mr. Atkins said.

"I don't think I'm interested in the lab stenographer. Isn't that just a secretary?" Bob asked.

"Well, essentially," Mr. Atkins said. "It probably is more suited to a girl. The stenographer would prepare the monthly reports and do the filing. Sometimes they calculate the data for the reports."

"Tell me about the technical superintendent," Bob said.

"He is really a chemical engineer. You would need a college degree for that job," Mr. Atkins said.

"That's fine," Bob said. "I hope to keep my grades up so I'll be able to go to college."

"In addition to collecting the effluent and doing some of the chemical tests, the technical superintendent supervises all the workers in the department. He is responsible for getting the permits that allow the mill to continue operation. These permits are based on good outcomes on the effluent tests," Mr. Atkins pointed out.

"I can't really decide if that is what I want," Bob said. "I would work inside all the time. Maybe I would be happier in an outdoor job, but I really want to do something significant about saving the environment."

Mr. Atkins suggested Bob keep thinking about possibilities. "You still have a few years to decide,"

he reminded Bob. "In the meantime you can take math and chemistry in high school and that might help you decide if you like that kind of laboratory work." Mr. Atkins invited Bob to stop by his office anytime if he wanted more information about other fields or related careers.

PROJECT COULD

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CAREER ORIENTATION UTILIZING LANGUAGE DEVELOPMENT

A PACE PROJECT

Elementary and Secondary Education Act of 1965

Project COULD was developed as a means of building skills, knowledges, and attitudes upon elementary children's previously acquired backgrounds. [illegible] language heard most frequently at home and in the immediate environment.

A series of units of instruction were developed from the concepts and vocabulary of the industries indigenous to Coos County. The intention was to promote vocational awareness, exploration and language development for the students in grades 3 through 8.

Materials prepared by Project COULD are available from the IMC of Coos County Intermediate Education District, 2405 Colorado Street, North Bend, Oregon, 97459.